

TWO NEW SPECIES OF SILKY LACEWINGS (FAMILY PSYCHOPSIDAE,  
ORDER NEUROPTERA PLANIPENNIA) FROM AUSTRALIA.

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(Plate xxxviii.)

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The rare and beautiful insects belonging to the family Psychopsidae, or Silky Lacewings, have their headquarters in Australia, where ten species are already known; in addition to these, there are only three or four other known species, found in South Africa, Burma and China. The family is a very ancient one and originally spread all over the world; fossil remains of its ancestors have been found in the Upper Triassic of Ipswich and in the Liassic and Upper Jurassic beds of Europe.

Two fine new species are here described, bringing the Australian total up to twelve. One of these comes from Central Queensland, and was discovered by Mr. W. B. Barnard, of Toowoomba, to whom it is dedicated. His specimens were given to Mr. R. Illidge, of Brisbane, who very kindly presented them to me; one of them is being presented by me to the Queensland Museum. The other is a unique specimen from Roebourne, W.A., sent for description by Mr. Glauert, Biologist of the Western Australian Museum, Perth. The photographs from which Plate xxxviii has been prepared were taken by Mr. W. C. Davies, Curator of the Cawthron Institute, to whom my best thanks are due.

These insects are evidently attracted to light on warm, still nights, and I think a considerable number of new species might yet be found in out-of-the-way parts of Australia, if they were looked for by this means between October and March. As each species is only out on the wing for a short time, collectors should note the date of capture; the Roebourne species has only the year (1920) on the label, and this will make it less easy to obtain more of it.

Undoubtedly the easiest way to obtain specimens of this family is to obtain the larvae from under the bark of Eucalypts. Only rough-barked trees should be selected, with fresh, healthy bark on them, and the best places to search are round the edges of a gum-flow or near large cracks in the bark. The bark should be levered up with a chisel or wooden wedge, and the characteristic grey pubescent larvae, with their large calliper-like jaws, will be found either on the raised bark or on the wood beneath it. As these larvae are cannibals, only one should be kept in each tube; the tubes must be kept dry and well aerated, the open ends being stopped with cotton-wool.

## Family Psychopsidae.

## Genus PSYCHOPSIS Newman.

## PSYCHOPSIS BARNARDI, n. sp. Plate xxxviii, fig. 1.

♂. Total length 10 mm.; forewing 19 mm.

Head small, 1.6 mm. wide; eyes dark greyish-brown, mottled; antennae pale testaceous basally, shading to dark brown distally (apices missing). Epicranium pale testaceous, varied with livid greyish; vertex and frons dark brown, except for pale testaceous areas surrounding the antennae, the brown thus forming a kind of X-mark with the four arms reaching to the eyes; surmounting this mark, on the epicranium, is a smaller, diamond-shaped, median area of brown, not quite as dark. Clypeus, labrum, labium and palpi all pale testaceous.

Thorax: Prothorax pale testaceous, pronotum covered with dense hairs of same colour. Mesothorax shading from medium testaceous anteriorly to dull brownish posteriorly. Metathorax brownish with livid greyish markings on pronotum. Legs short, pale testaceous, apices of tibiae and tarsi dark brown.

Wings: Forewing 11 mm. wide at tornus, hindwing 9 mm. wide at same place. Rs with 13-15 descending branches before end of *vena triplica* in forewing, 11 such in hindwing.  $M_{3+4}$  in forewing fusing with  $Cu_1$  about half-way. Posterior margin of both wings concave distally, that of hindwing only slightly so; tornus of forewing very prominent. Both wings with a complete series of costal cross-bars and three complete series of gradate crossveins; forewing also with from four to seven crossveins forming the upper half of an additional gradate series on disc, between basal and middle series. Forewing subhyaline, the veins pale testaceous, the membrane slightly tinted. On the *vena triplica*, at one-fourth from base, is a rounded, reddish-brown spot 1.2 mm. in greatest diameter, with darker border; from it two blackish lines diverge posteriorly to M, where they join with the irregular brownish markings along the posterior margin. In the apical half of the wing, three fasciae are present, each irregular in form, narrow, and bordered on either side by a fine blackish line; the most basal of these fasciae is not darkened between the lines, but the other two are shaded brownish; the three fasciae converge together strongly towards the tornus, but the most distal one, lying close to the termen, ends up before reaching the other two; these latter, however, join together to form a brown blotch which runs into an irregular patch of bright reddish-brown above the tornus, bordered by three small black dots. About half-way between costa and tornus are two larger black spots, one lying on the distal side of each of the first two fasciae before they merge; there is also a very small black spot in the brown blotch below them. Along  $Cu$  and between it and posterior margin are some irregular brownish blotches, from one of which, at about three-fifths from base, an oblique black line runs upwards for nearly 2 mm., suggesting the beginnings of the formation of an extra fascia. Both costa and termen are lightly mottled with markings of pale brownish testaceous. Hindwing with dull creamy veins, and hyaline, iridescent membrane. A large blackish, oval spot, 2 mm. in greatest diameter, lies below end of the *vena triplica*, and a slight brown cloud around tornus, with indications of one or more dark spots on the tornus itself.

Abdomen dull medium brownish above, with indistinctly outlined darker markings mid-dorsally and laterally on segments 2-8. Segments 9-10 pale testaceous, forming a large bulb carrying a pair of large and very hairy surgonopods, valve-shaped, depressed, with apices convergent and well rounded; basally, touching the lateral raised margin of the bulb on either side, is a small nodular

swelling lying in a slight hollow of the outer face of each surgonopod. Tergite of segment 9 projecting between these two surgonopods as a sharp process nearly as long; viewed laterally, it is bifid, the upper branch being short, sharp and tooth-like, the lower longer, lobed in the vertical plane and well rounded.

*Habitat*.—Central Queensland.

*Types*.—Holotype male in Cawthron Institute Collection and paratype male in Queensland Museum, Brisbane, both taken at Blackwater, Central Queensland railway, on 9th Nov., 1922, by Mr. W. B. Barnard, to whom this species is dedicated. The paratype is larger than the holotype (forewing 22 mm.) but has a small piece missing from above the apex of the left forewing, and does not show the structure of the ninth tergite, owing to the surgonopods being tightly closed. Two other males in Cawthron Institute Collection, one taken by Mr. Barnard at Huntley Station, Central Queensland railway, on 10th Nov., 1921, and one by Mr. E. J. Dumigan at Clermont, Central Queensland, on 15th November, 1924.

This species comes nearest to *Ps. gracilis* Till., from which it can be at once distinguished by its much more robust build, broader and hairier wings, less angulated tornus in both wings, larger black spot on hindwings, and marked differences in the fasciation and other markings of the forewing; in particular, the dark patch in basal part of forewing touches the base in *Ps. gracilis*, but is one-fourth of the length of the wing from base in *Ps. barnardi*, n. sp. The new species is also related, but less closely, to *Ps. mimica* Newm., *Ps. margarita* Till. and *Ps. elegans* Guér.

PSYCHOPSIS MACULIPENNIS, n. sp. Plate xxxviii, fig. 2.

♂. Total length 10 mm.; forewing 19 mm.

Head pale ferruginous; eyes dark grey; antennae pale testaceous basally, shading to dark brown distally.

Thorax pale dull testaceous tinged with ferruginous at bases of wings. Legs pale testaceous tinged with ferruginous on femora.

Wings dull creamy all over, the costa slightly darkened. Forewing only 10 mm. wide at tornus, hindwing 9 mm. wide at same place. Rs with 15-16 branches before end of *vena triplica* in forewing, 12-13 such in hind. Posterior margin not concave distally in either wing, tornus not prominent.  $M_{3+4}$  in forewing fusing with  $Cu_1$  only for a short distance, well beyond middle, then separating again. Both wings with a complete series of costal crossbars and three complete series of gradate crossveins; of these the discal one in forewing tends to become doubled, and there are also a few extra crossveins in the disc. Forewing with three dark spots along *vena triplica*, each being blackish on the membrane but bright ferruginous when crossing a vein; of these, the basal one is the largest, reaching down into the disc below Rs; the middle one is smaller, only extending from Sc to Rs; the distal one is very small; there is a suspicion of a fourth spot towards end of *vena triplica*. Just beyond end of *vena triplica* is a larger, dark brown, semicircular spot, and below this a small dark blotch on the gradate series. The costa carries four small dark spots, one obliquely above each of the four already mentioned. On the posterior margin are five small but well-defined black spots, three in the basal half and two in the distal; there is also a very small black spot on the termen, a little beyond tornus. Hindwing with an oval blackish spot, 1.6 mm. in greatest diameter, just below end of *vena triplica*.

Abdomen dark brownish above, pale testaceous on sides and beneath. Sur-  
gonopods pale testaceous, hairy, in the form of broad valves; tergite of segment 9  
projecting slightly between their bases as a short, button-like process.

*Habitat*.—Roebourne, W.A.

*Type*.—Holotype male (unique) in Western Australian Museum, Perth, W.A.;  
label "1920—130/ Roebourne".

Cawthron Institute, Nelson, N.Z. 10th Sept., 1925.

EXPLANATION OF PLATE XXXVIII.

Fig. 1 (below) :—*Psychopsis barnardi*, n. sp., holotype male. Expanse 38 mm.

Fig. 2 (above) :—*Psychopsis maculipennis*, n. sp., holotype male. Expanse 41 mm.

